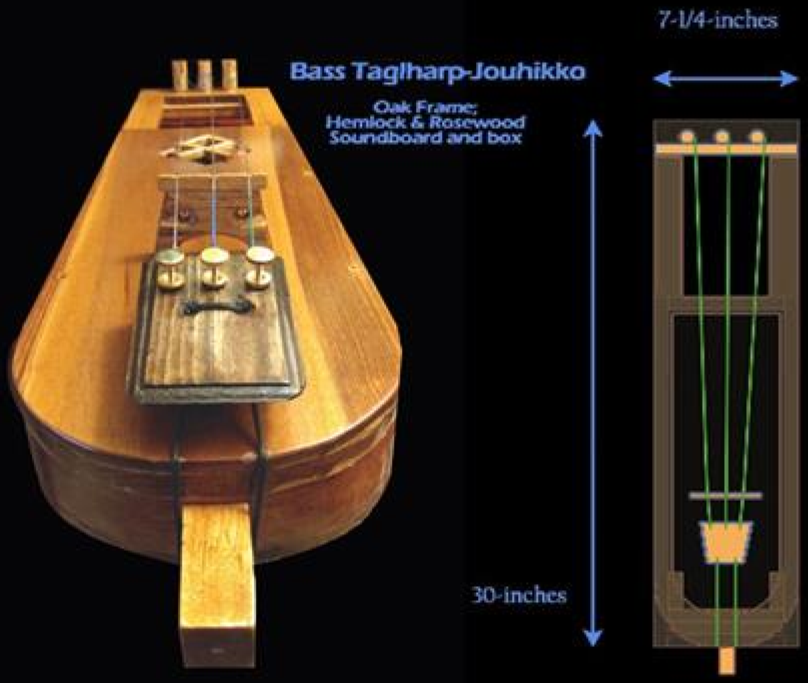


Bass Taglharp/ Jouhikko

Extensive Plans for Hand Manufacturing This Ancient Northern Instrument

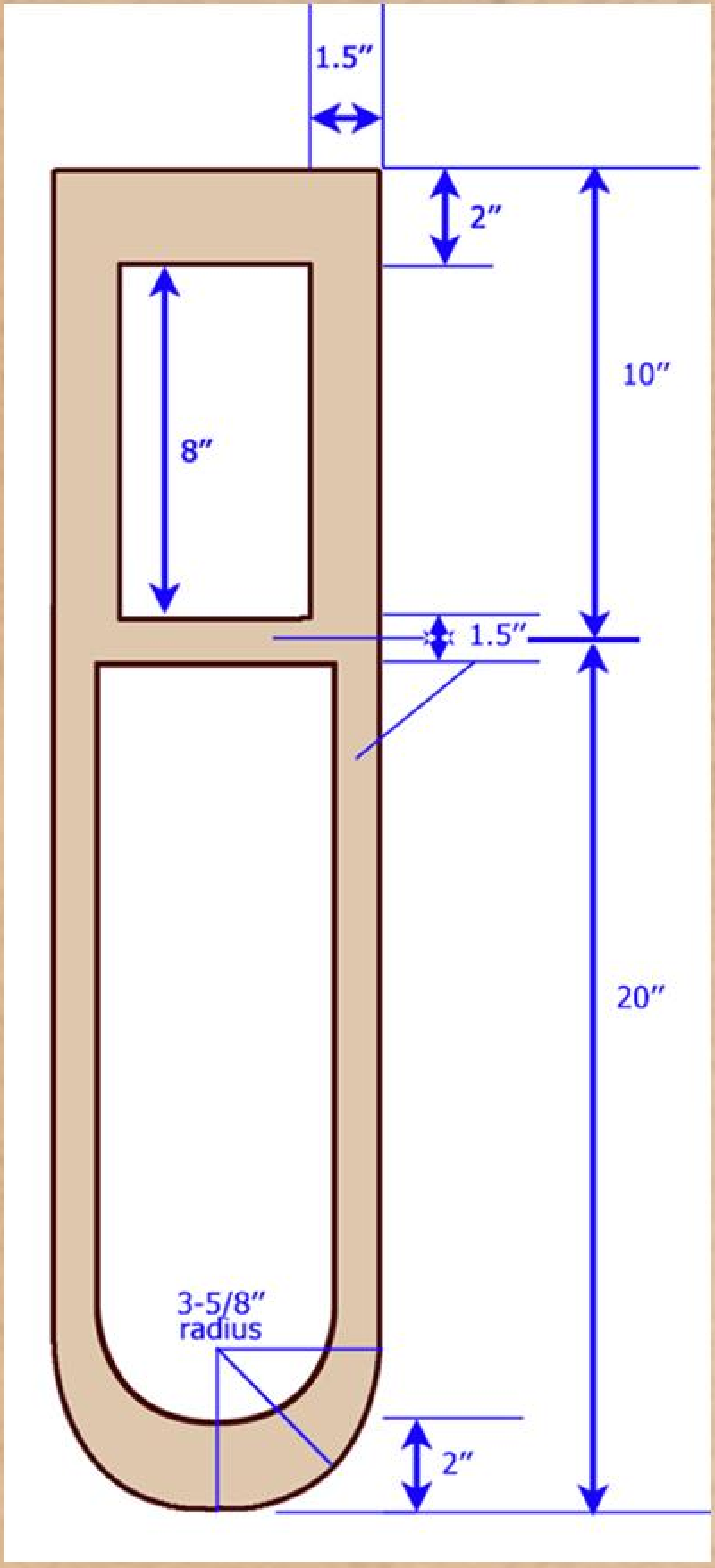
- PARTS & EQUIPMENT LIST:
- ·6-ft of 1-3/8-inch x 1-inch Oak or Hemlock
- ·5-ft of 7-1/4-inch x 1/4-inch Spruce or Poplar (one @ 2-ft & one @ 3-ft)
- ·5-ft of 3/4-inch x 3/4-inch rounded Oak (corner molding)
- ·3-ft of 7-1/4-inch x 1/2-inch Oak
- ·2-ft of 1/8-inch round Oak (or other hard wood) dowel material
- 2” long 1”x1” (optional 1” diam. round) hardwood·
- save all cut-out/scrap wood

- ··2 or 3-dozen #8-#10 1/2"-long & 1"-long counter-sink wood screws
- · 1/4" double-ended 2"-2.5" lag-screw

- ·one set of drill-bits 1/16"-9/64"
- ·Powered Drill/Screw-Gun w/ P1 & P2 Bit Drivers
- Drill Bits (1/16’’ & 1/8’’)
- Counter-Sink Drill Bit
- ·Screwdrivers Philips & Standard/Flat
- ·Jigsaw w/Fine & Coarse wood cutting blades
- wood glue (or original "Gorilla" polyethylene glue)
- ·120 & 220 grit sandpaper
- ·Wood Stain (optional) & brush
- ·Clear Acrylic Varnish/Coat (spray can pref.)

- ·3 x Guitar tuning keys/posts
- ·3 x Cello String fine-tuners (or Violin String fine-tuners if using horse-hair)
- ·1 set of metal (or other) Cello strings OR 2 Hanks of black horse-hair

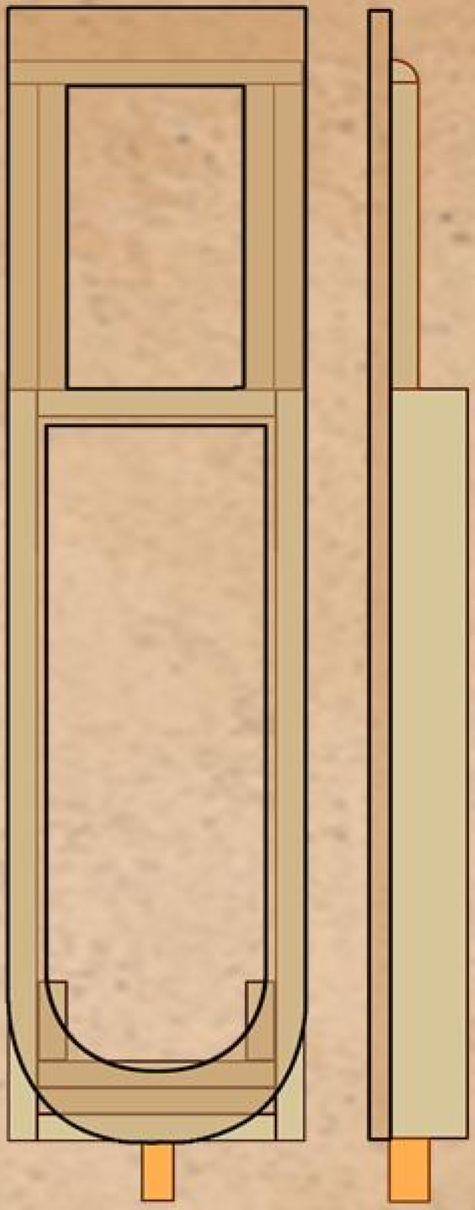
BASE-FRAME



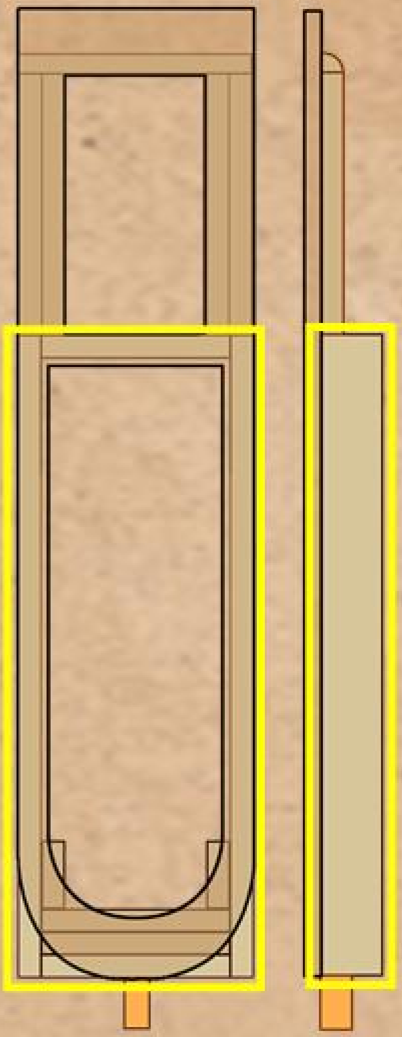
Begin by cutting out and assembling the parts we need for our musical instrument's Base-Frame.

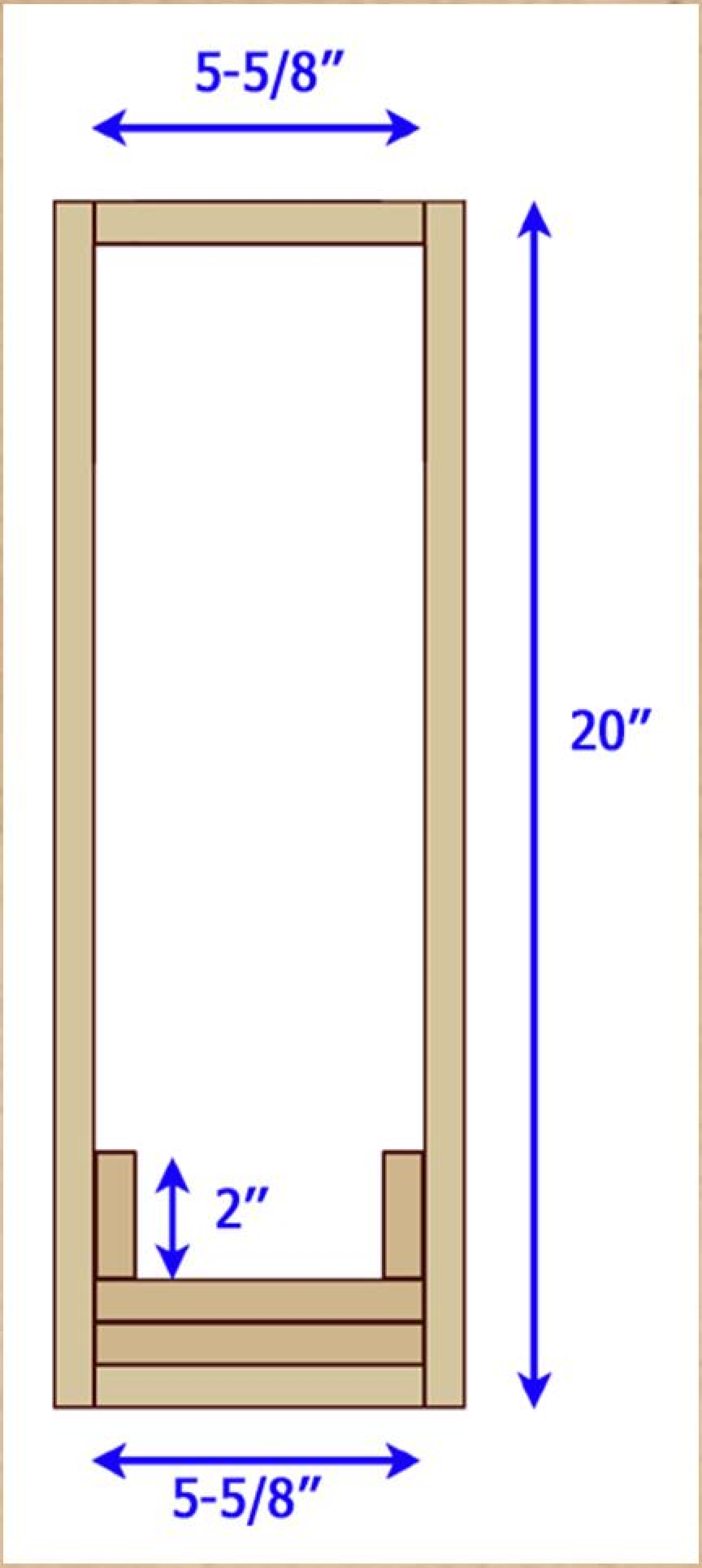
Measure, Mark, and Cut-out with a jig-saw the Base-Frame from the 5′ board of 7.25″x 0.5″ hard wood.

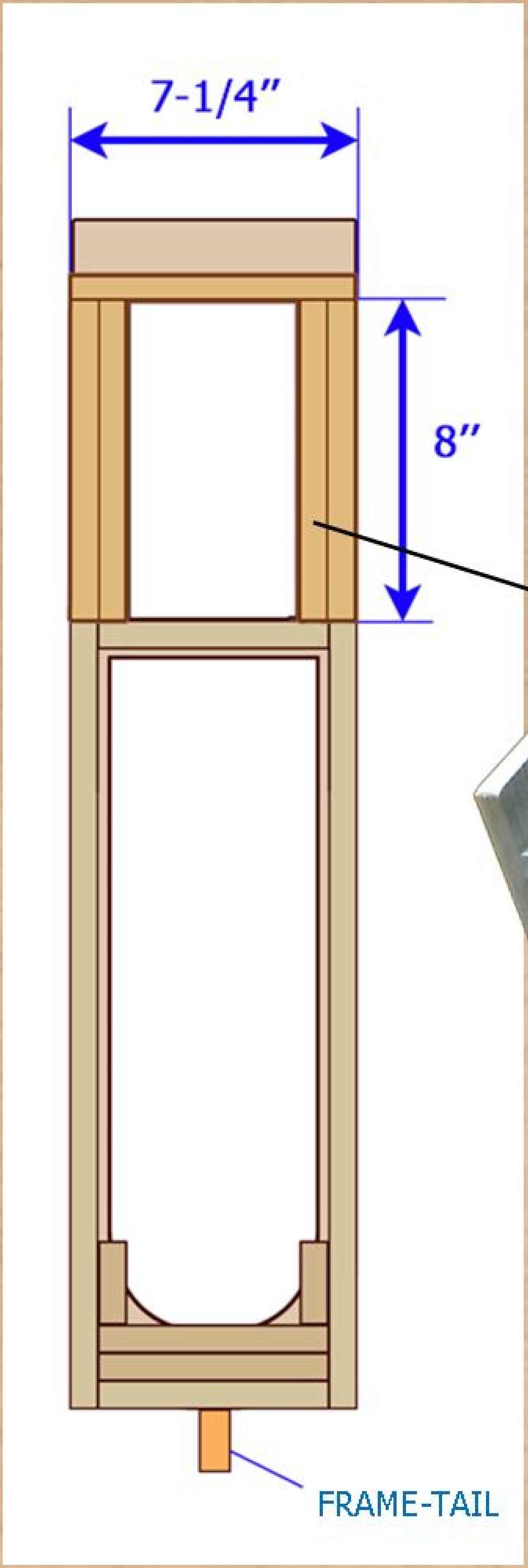
Make certain to keep cut scrap...



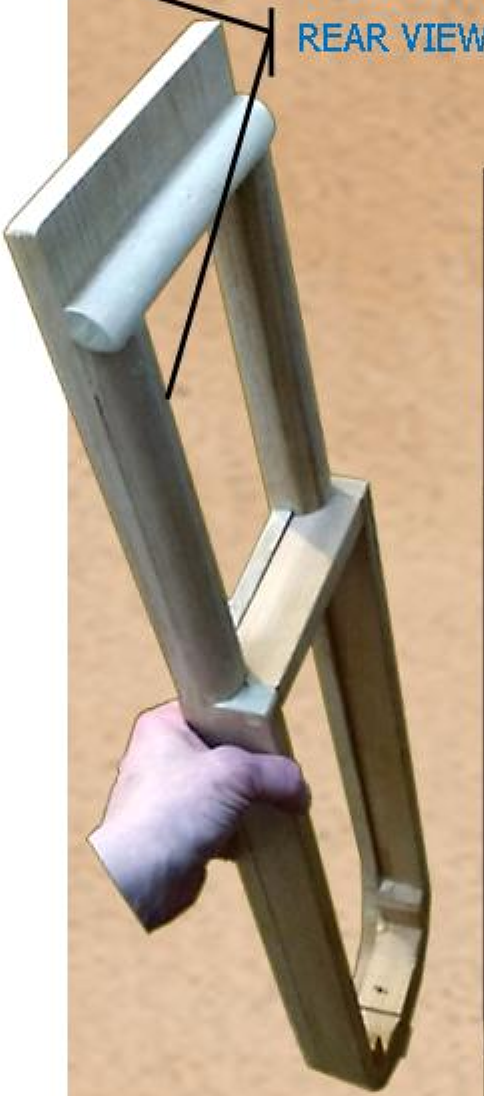
- Next step shall involve the Measuring, Marking, and Cutting of the Sound-Box portion of the instrument's frame, using the 6-foot length of 1-3/8″ x 1″ hardwood with the following cuts:
- 2 @ 2″
- 2 @ 5-5/8″
- 2 @ 20″
- Assemble & attach the Sound-Box frame to the Base-Frame using glue and screws.

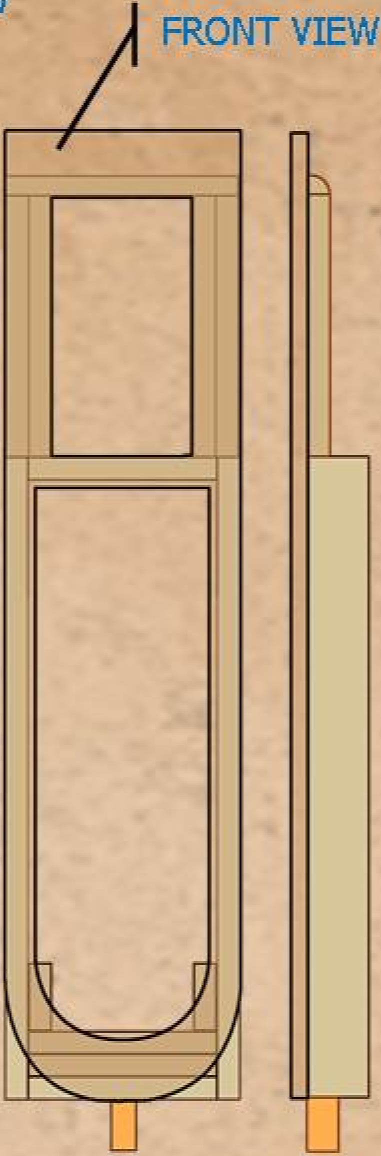






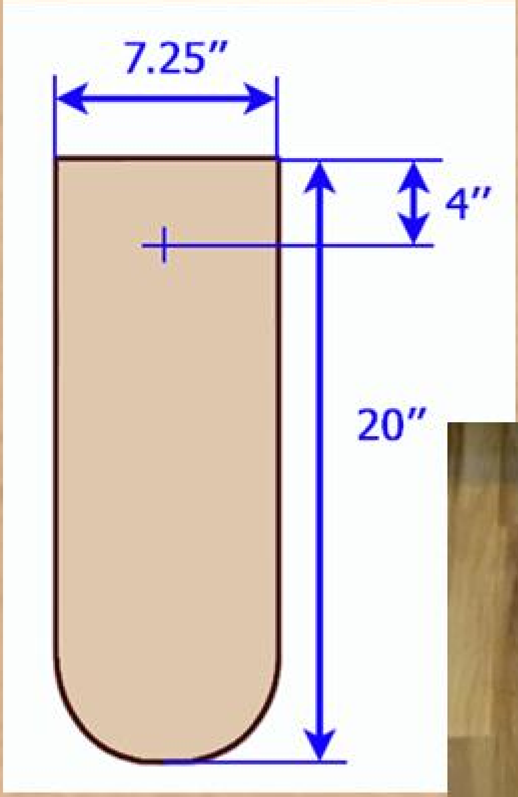
- The rounded upper-frame supports can be Marked-out, Cut-out, and assembled from the 5-foot length of 3/4″ x 3/4″ rounded oak you will need Four 8″, and One @ 7.75″. Those five pieces will be secured to the Base-Frame with glue and dowels…
- Attach the Frame-Tail only after completing the last step of frame building…

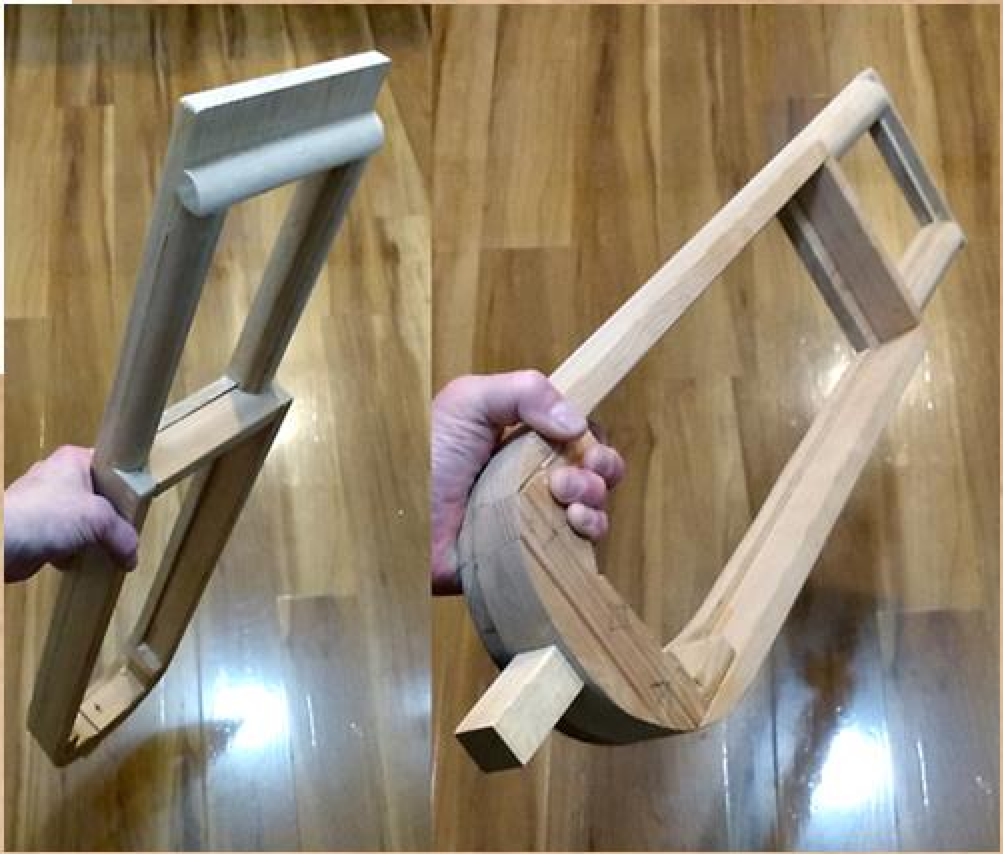




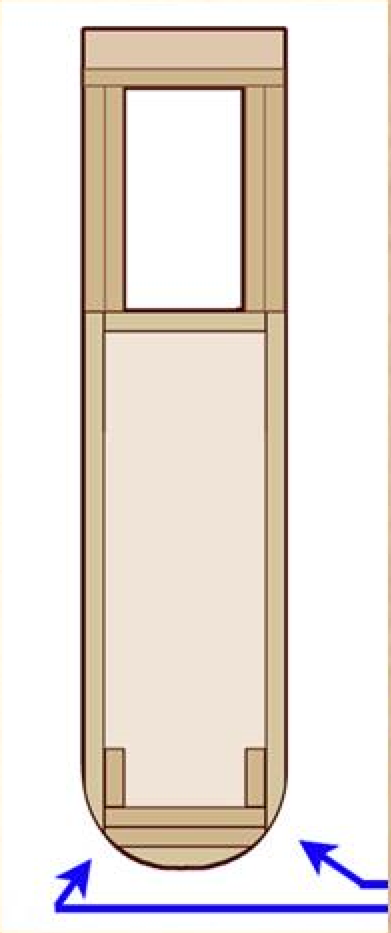
FRONT SOUND-BOARD

- Cut out the front Sound-Board piece from the 5-foot length of 7.25″ x 1/4″ hardwood...
- Attach the front Sound-Board with glue and (preferably) 1/8″ round dowels; allow to set/dry completely...
- Remove lower frame corners, creating a rounded bottom; sand and clean...

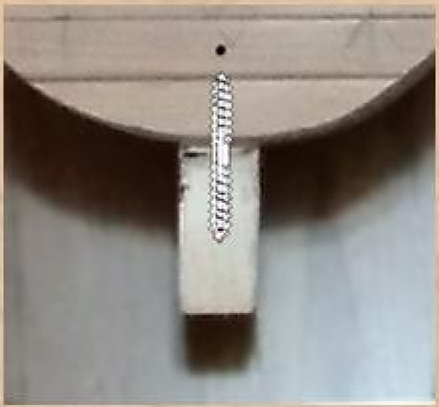




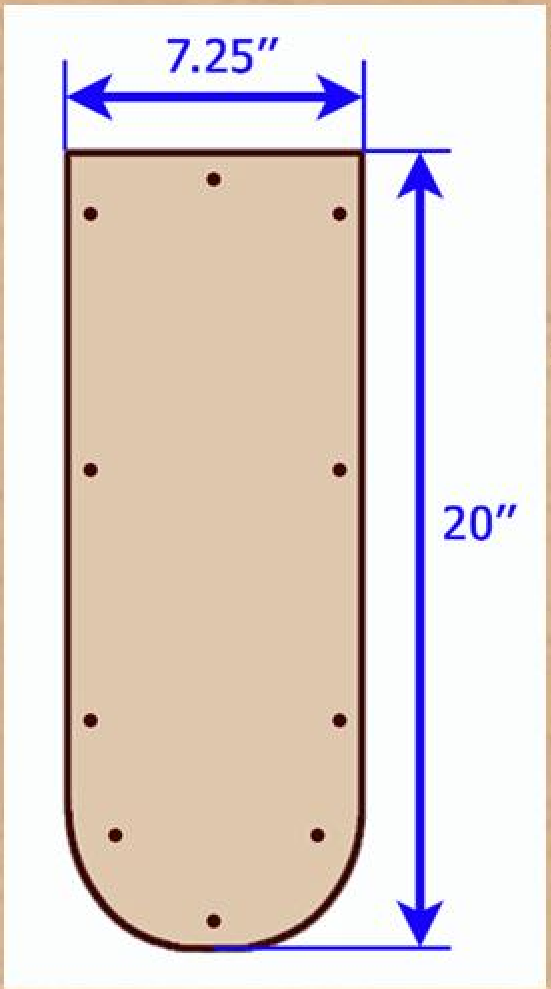
- After bottom frame is rounded & sanded, install the 1″x 1″ (2″ long) Tail to frame with double-ended lag-screw and glue...



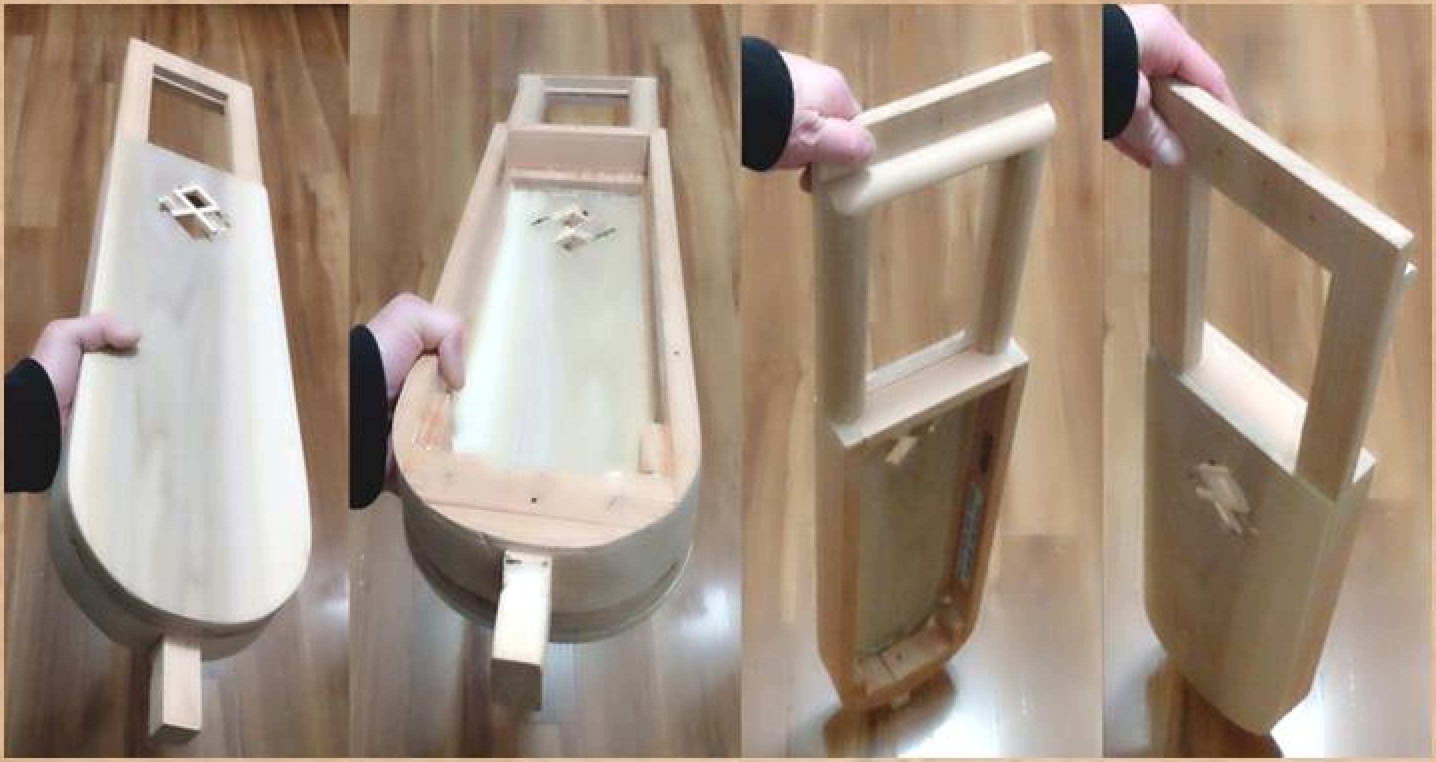
REMOVE CORNERS TO CREATE ROUNDED BOTTOM



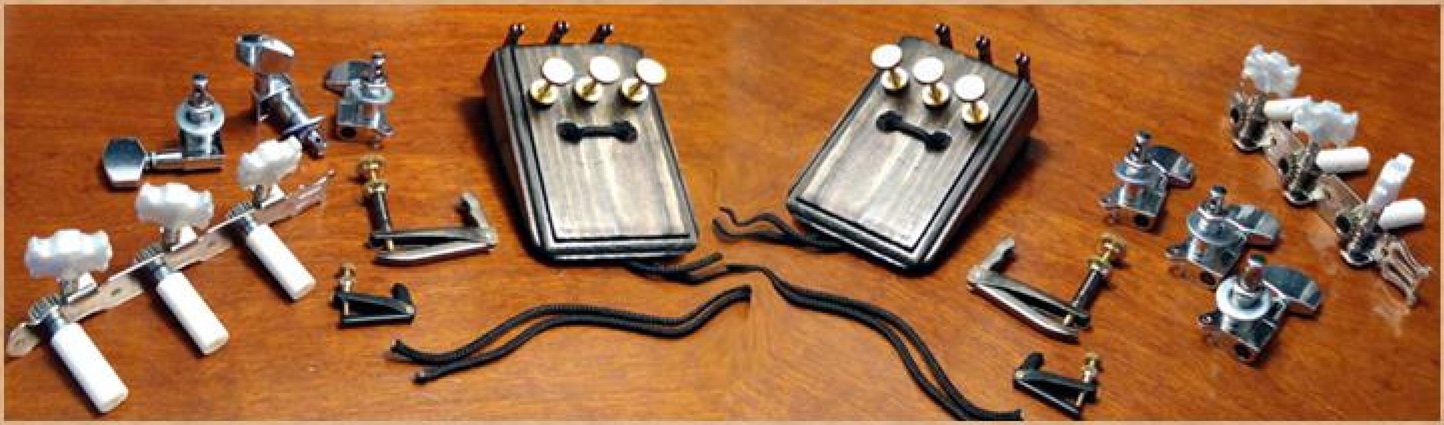
INTERIOR DETAIL OF LAG-SCREW AND FRAME-TAIL PIECE



- Cut the Sound-hole out from the installed front Sound-Board (it can be cut in any shape or design); it should have a total area of at least 6.5-square-inches of material removed (no more than 7.25″ squared)...
- The back Sound-Board piece shall be removable. Therefore, drill (10-12) evenly-spaced holes around perimeter of it (spaced 1/4″ from edge) and finish each hole (on one side) w/ a counter sink drill bit. Fit the Back on perfectly, then predrill holes in sound-box frame to half of screw length w 1/16″ drill bit. The back will be attached just prior to the final sand, stain, and varnish...



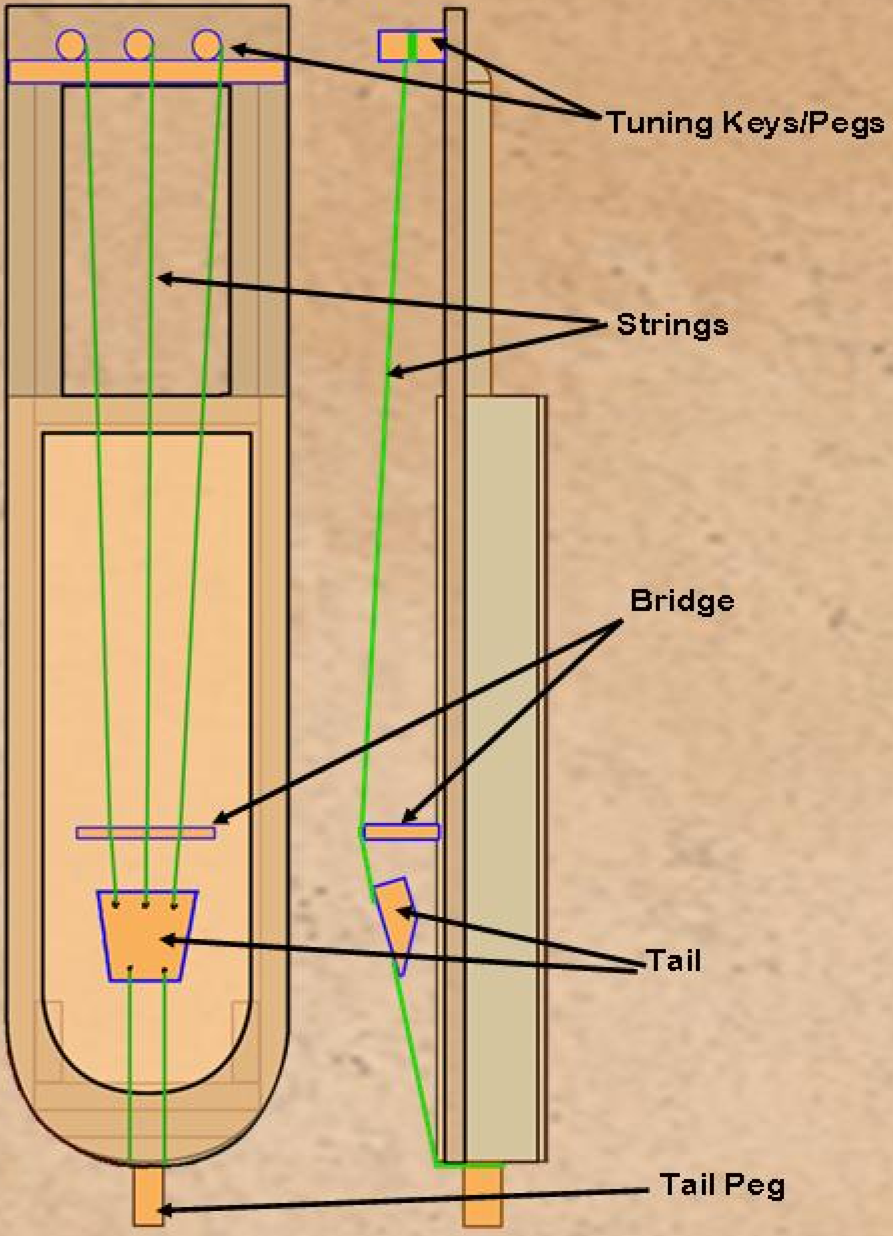
COMPLETE ASSEMBLED BASE-FRAME (REMOVEABLE BACK NOT ATTACHED)



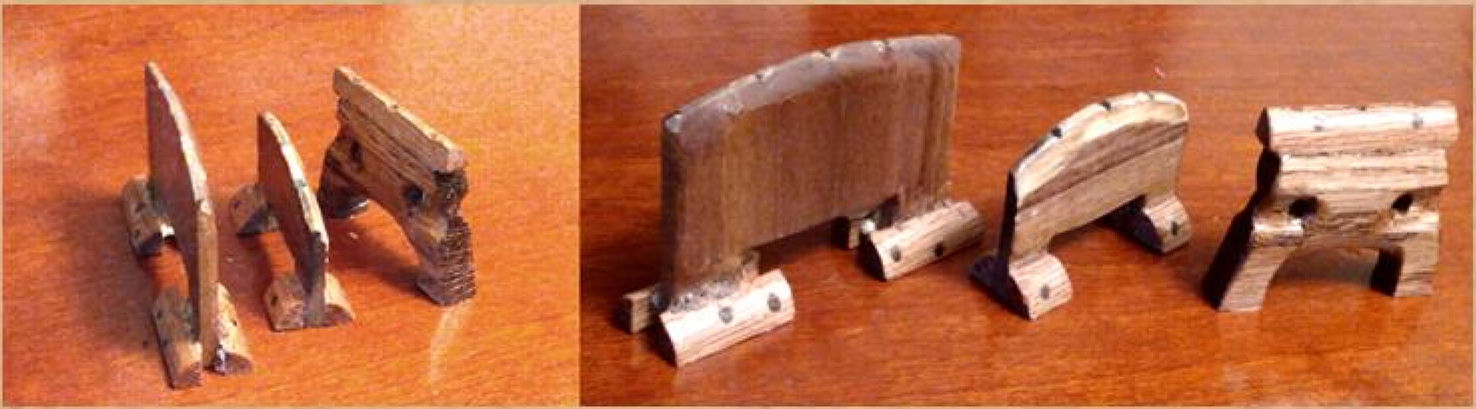
INSTRUMENT HARDWARE: TUNERS AND TAIL-PIECE

THE FOLLOWING HARDWARE IS REQUIRED FOR THIS THREE-STRING BASS TAGLHARP/

- 3-CELLO STRING PEGS (preferably professionally manufactured) *OR* 3-GUITAR STRING TUNERS & TUNING KEYS (with tuning posts that can mount to & clear 1/2" thick material)...
- 3 VIOLIN or CELLO STRING FINE-TUNERS (dependent upon whether Horsehair or steel Cello strings are used)...
- 1 bridge (made from cut-piece of 1/4"-thick board; detailed on previous page)...
- 1 Tail w/ Fine-Tuners...
- Nylon (or equivalent) cord to attach Tail to Tail Peg....
- After you complete creating the Bridge, Tail & Tuning parts (further detailed on next page); Sand all the pieces & the instrument thoroughly, clean, apply stain to all the wood parts, let it dry, clean again, then coat the instrument & parts with clear varnish and allow to dry.



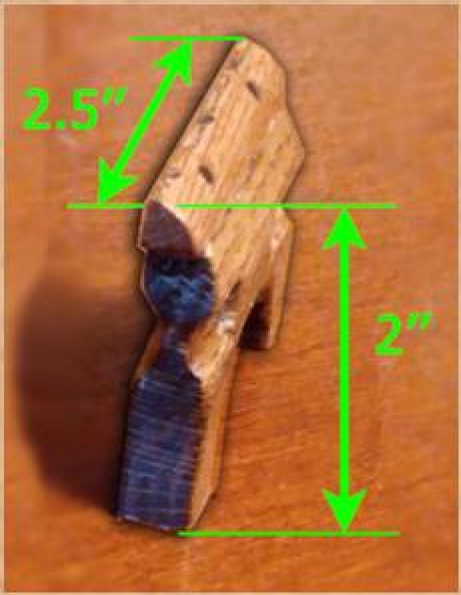
BRIDGE, TUNERS, TAIL-PIECE



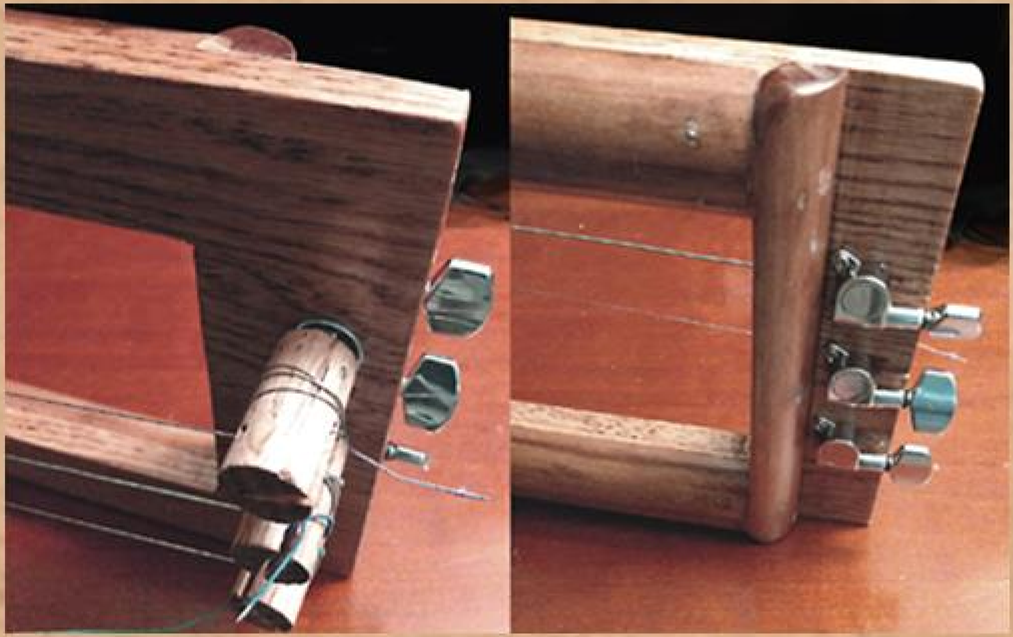
THESE ARE SOME OF THE BRIDGE DESIGNS FOR THE INSTRUMENT.

(THESE WERE MADE OF THE RECYCLED WOOD-SCRAP FROM THE INSTRUMENT FRAME CUT PIECES)

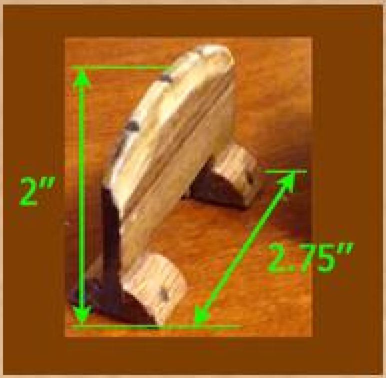
- The Bridge piece (that supports the strings as they travel from the Tail to the main Tuners) can be designed & built in a number of different ways; for example, the top of the Bridge can be rounded or flat (traditionally it is flat)...



- The alternative rounded Bridges (above) are constructed from multiple pieces; the bodies were made from scrap pieces of 0.25″ thick Poplar, and the Feet are made from scrap Oak and attached with glue and dowels...
- The Bridge (pictured left) was built from a single 2″x 3″ x 1/2″ scrap piece of Oak. It tapers from a thickness of 0.5″ at the Feet to a point of 0.125″ at the Top—the width tapers from 3″ to 2.5″...
- After the Bridge has been cut, shaped and sanded, it is stained (optional) and given a few light coats of varnish...
- The Bridge Feet should be as perfectly flat as possible & not varnished.
- Notches (for the Strings) at the Top are not cut until the last step of Stringing the instrument...

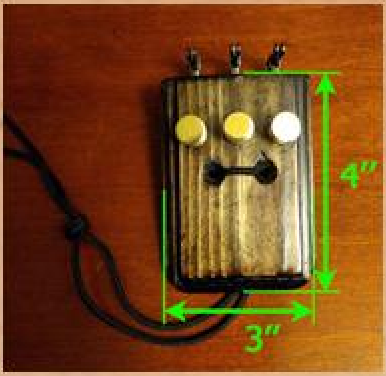


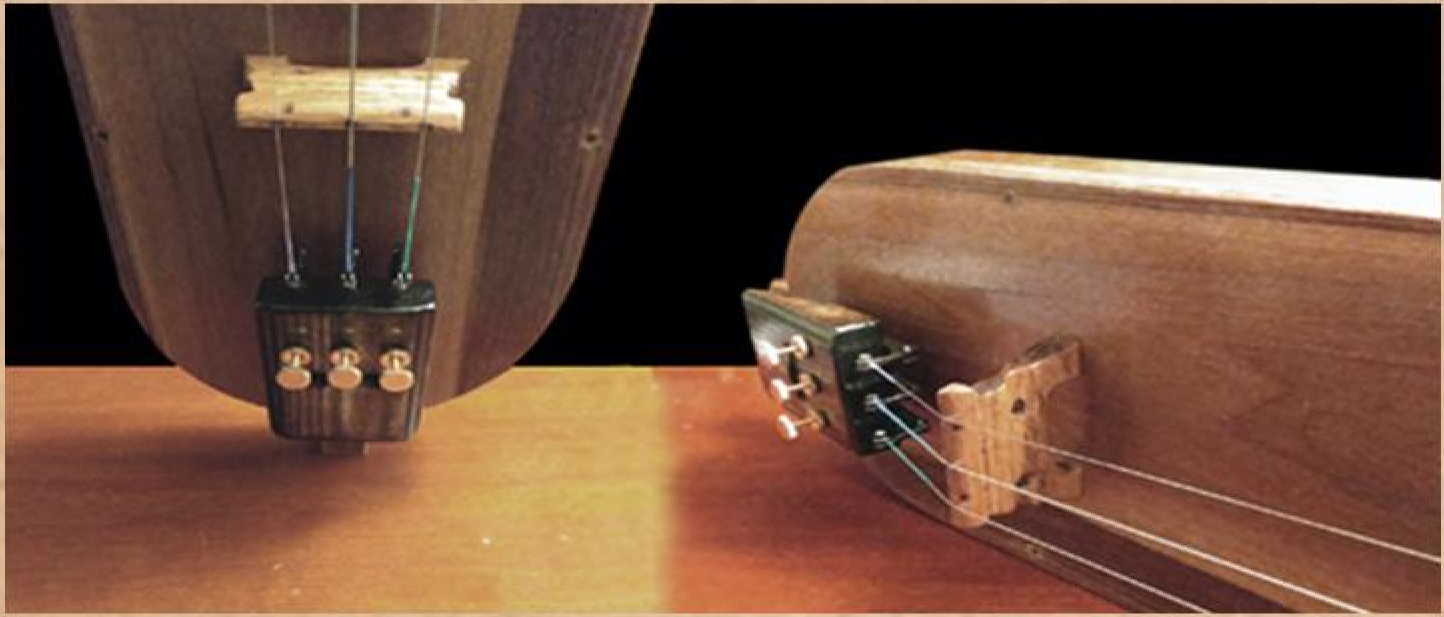
Drill three holes to tightly fit the Tuning Key Posts through (from the back through to the front). Three slotted one-inch diameter oak pegs are attached to the Tuning Posts on this instrument (for ascetics and to allow the instrument strings to be more easily attached)...



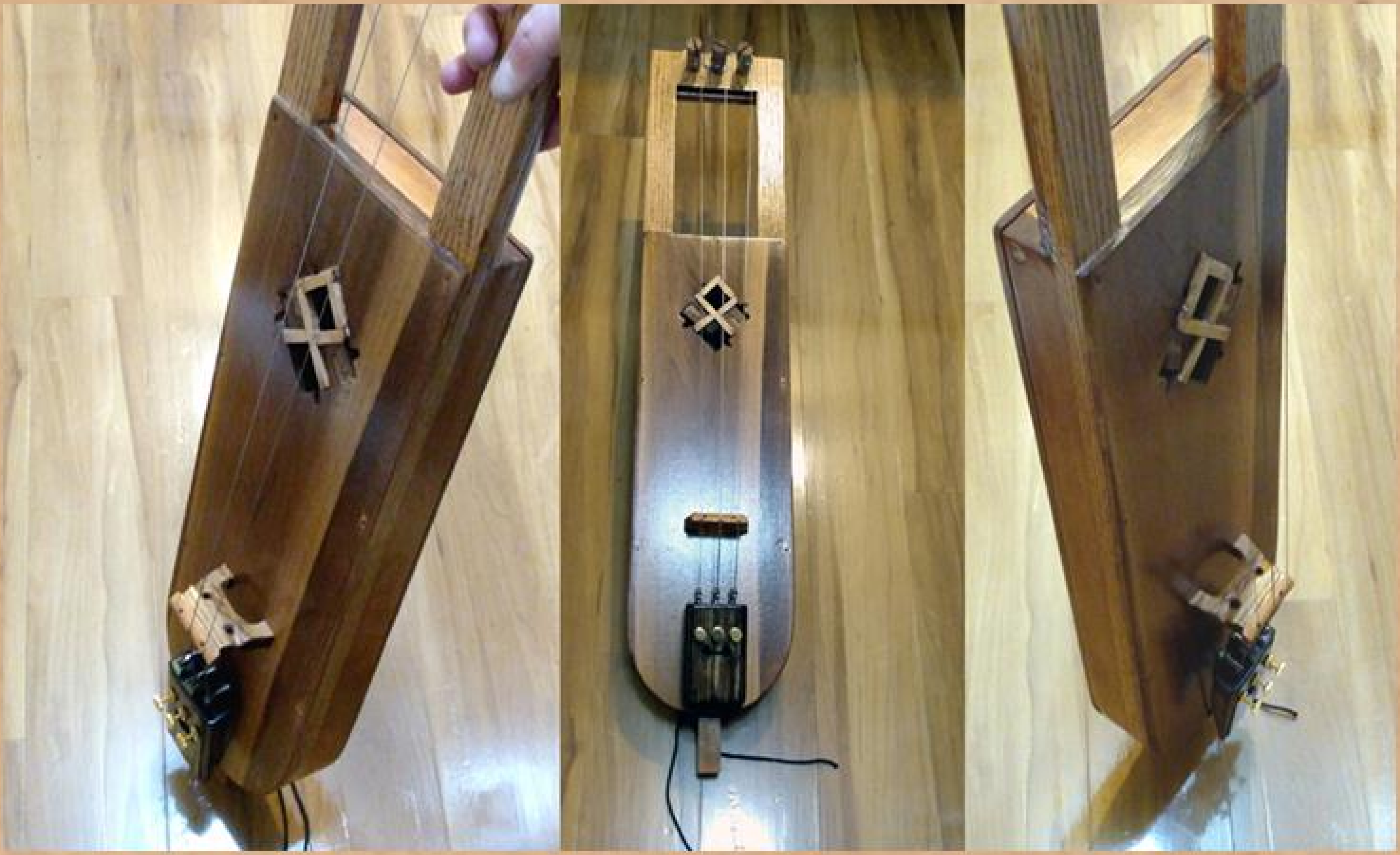
Narrow the top of the Bridge to a tapered point. This Bridge makes use of some scrap Oak 1/4" corner molding to give the bridge stable feet at it's base**...**

Attach the Fine Tuners to the Tail Piece and drill holes to feed the cord through and attach it to the Tail Peg...





When setting the Bridge, do so without physically attaching it to the Soundboard with fasteners or glue; it should be held in place by the pressure of the tightened instrument strings alone...



The completed instrument

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